

Historic Structures Survey

The Towpath
Of the
Chesapeake and Ohio Canal

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Historian

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PREFACE

This version of the 1961 study was transcribed and formatted by C&O Canal National Historical Park volunteers for publication in electronic form in 2012. The bibliography at the end was added at this time, as were the photographs that were selected from the Chesapeake and Ohio Canal National Historic Park collection. The photos illustrate the complex nature of the towpath, its diversity, and a few of the many structures it passes through, over, under, or beside.

At the time that the study was originally done, the lower 22 miles (from Dam No. 2 just below Seneca, Maryland to the tidelock at the mouth of Rock Creek on the southeast end of Georgetown) had been restored for recreational purposes by the Civilian Conservation Corps between 1939 and 1941, and was designated the Chesapeake and Ohio Canal Recreational Waterway. On January 18, 1961, President Dwight D. Eisenhower proclaimed the canal above Seneca to Cumberland a National Monument. Not until President Richard Nixon signed the park legislation on January 8, 1971, would the Chesapeake and Ohio Canal become a National Historical Park.

No structure is as important to the past, present, and future use of the Chesapeake and Ohio Canal as the towpath. Its integrity from tidelock to the Cumberland terminus is essential to the interpretation and identification of the entire line of the canal, especially in those remote areas where nature is reclaiming the old boat channel. The towpath today provides access to the park's historic structures, recreational resources, and extensive sections of the Maryland shore of the upper Potomac River. Most of all, the towpath's 184.5 miles constitutes a popular hiking and biking trail, intersected by other major eastern trails such as the Appalachian Trail and the Great Allegheny Passage Trail between Cumberland and Pittsburgh.

It would be impossible to overstate the importance of the towpath, as it is the largest and most dramatic structure of the Chesapeake and Ohio Canal and of the National Historical Park that preserves this unique historical and recreational treasure for the American people.

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I: The Towpath on the Canal Berm

Introduction

The purpose of this report is to present the results of a general study of documentary courses related to the construction of the towpath of the Chesapeake and Ohio Canal.

Historic Data

The towpath of the Chesapeake and Ohio Canal served as a walkway for the mules and horses, which towed the canal boats that plied the waterway during the period of its operation. The towpath was limited by the by-laws and regulations of the Chesapeake and Ohio Canal Company to the towing animals, and was never intended for use as a bridal path nor for vehicular traffic.¹ This limitation affected the construction of the path.

Documentary information concerning the construction of the canal towpath is very limited. While the Company's board of directors issued detailed orders and instructions for nearly every other phase of construction of the canal and its works, no comparable instructions were prepared in connection with the towpath.²

The construction of the trunk and banks (including the towpath) of the canal was contracted for by numbered sections, and a set of general specifications for the embankment of the canal reads as follows:

The canal banks are to be so constructed that the water may at all places be at least fifty feet wide at the surface, usually denominated the water line, thirty feet at the bottom of the canal, and six feet deep, except where from peculiar circumstances it may be necessary to reduce the width.

Each of the banks shall rise above the water line at least two feet, if required; and such a slope shall be preserved on the inner and outward side of the banks so that every foot of perpendicular rise shall have a horizontal base of eighteen inches or more, if required. The towing path shall be on the river side of the canal; its summit shall be at least twelve feet wide; and both banks shall have a lateral declination at their summit from their inner to their outer edges, at the rate of one foot to the foot.³

¹ *By-Laws, Rules and Regulations in Force on the Chesapeake and Ohio Canal, 1 April, 1851, Article 64*, records of the C&O Canal Co. National Archives.

² (1) Circular to Engineers, May 15, 1829, records of C&O Canal Co.

(2) Report of the Inspector of Masonry, Dec. 3, 1828, same source.

(3) Letter, Wright to President & Directors, Oct. 2, 1830, same source.

(4) Letter, Purcell to President & Directors, Nov. 9, 1830, same source.

³ Records of the C&O Canal Co., National Archives

The contractors were required to provide the surface with a smooth dressing, excluding large rocks from the walkway. The larger stones were used in the embankment, while the smaller ones were reserved for use near the construction of the upper portion.

The type of dressing applied to the towpath surface varied with the availability of materials. Thus, in some areas sand and clay appear to have been employed; in others hand knapped rock was used. In the case of the latter, a roller was employed to smooth the surface. In places where slate was easily accessible, that was used to surface the path.⁴

In the early 1870's a part of the towpath on the Monocacy division, on which the clay was so bad that the path was almost impassable in wet weather, was macadamized.⁵ The president, A. P. Gorman, was so pleased with this portion of the towpath that he recommended that the entire line of the walkway be macadamized and that additional steam rollers be purchased to accomplish this.⁶ However, his suggestions in this matter were met with silence, and no record has been located indicating that any other portion was so paved.

At various times, the Company's directors authorized repairs of varying magnitude. Breaks, floods, the normal effects of time and use, all conspired to keep the mule path in a nearly continual need for repair.⁷

⁴ Note, n.d., Records of the C&O Canal Co., National Archives

⁵ Forth Seventh Annual Report of the C&O Canal Co.

⁶ *Ibid*

⁷ (1) Proceedings of the president & Board of Directors, Books, A.E.D.

(2) Forty Third Annual Report of the C&O Canal Company

II: The Towpath through the Slackwater Sections

Introduction

The purpose of this study is to present all data pertaining to the towpath of the C & O Canal that has been located since the preparation of Part I of this report.

Historic Data

As was noted in Part I of this report, the towpath was constructed as part of the prism of the Canal's trunk. The material employed was dictated by what was immediately at hand; and the dressing applied varied with available materials.

The only data that has been located that would increase knowledge of the structural requirements of the towpath was a specification for the towpath for the slackwater above Dam Number 4.

Dam Number 4 created an impoundment in the Potomac River, which was used to supply water for that portion of the Canal between the Government Dam at Harpers Ferry and the Guard Lock above Dam Number 4.

Immediately upstream of the Dam Number 4 is Galloway's Cliff. The presence of this feature made the construction of an artificial waterway at this point unfeasible. Therefore, the Canal Company's officials decided to resort to river navigation for a distance of approximately three and three tenths miles.⁸

In using the river's impoundment for navigation, the Canal boats were locked out of the Canal into the slackwater. This took care of the boats, but provision had to be made for the mules that towed them. They could be taken aboard, but this would have left the boats without controlled power. The canal boats were not equipped for independent river navigation; and the mules were needed for power as much on slackwater as on the canal. Thus a towpath was required along the slackwater at the base of Galloway's Cliff.

The following specification for such a towpath was prepared by either Thomas Purcell or Charles Fisk, Canal Company engineers:

Specifications of the manner of constructing the towing [path] to be made for the use of the Chesapeake & Ohio Canal, following the margin of the Potomac River from Section 157 to Section 165 of said Canal.

The towing path shall not be less than twelve feet wide on the top and shall raise [sic] at least 8 feet above the top of the dam when finished, that is now being built by Jo-

1 *Records of the C & O Canal Co.*, National Archives

seph Hollman below said Section 157; it shall be level on the top if required, but shall never in any case vary more from a level than two feet in a hundred of its length. & its greatest elevation above the surface of the water shall never exceed twelve feet.

In forming the embankment along the shore the filling behind the wall shall in all cases extend back to the face of the hill, so that no vacant space shall be left between the towpath and the hill, even though the breadth on the top may thus exceed 12 feet first specified. The entire length of the towing path shall be faced with a stone wall in the following manner. All that part of the towpath from the Guard Lock on the Section 157 up to the rocky cliff, known as "Galloway Mills Cliff," shall be protected with a pavement or slope wall, at least one foot thick and the entire height of the bank. The remainder of the distance to be faced & protected by a slope, or vertical wall, as the Engineer may prefer. The vertical walls when built shall be three & a half feet thick at the top, & batter 3 inches for every foot of the height; the slope wall when built, shall be three [feet] thick at the bottom, & two feet at the top, & slope at an angle of forty five degrees: the foot of every wall shall be so placed as to be at least six feet below the top of the aforesaid dam building by Joseph Hollman and shall rest on a rock foundation. The filling behind the walls shall be of small stone and sprawls; and in no case shall clay or other earth be put next to the wall. The top of the horse path shall be made smooth & even, & no large stone shall appear on its surface.

Whenever in the opinion of the Engineer having charge of the work it is advisable, stone culverts, or bridges of stone & wooden as to him seems best, shall be erected of such dimensions as he shall direct: & back drains or ditches cut communicating with said culverts was to pass under the path the water that may flow from the adjacent hills. And it is hereby directed that the towpath shall be so fashioned that the curvature shall never exceed that formed by [illegible] of two hundred feet. The grubbing and clearing shall extend to the distance of twenty feet above the upper side of the path & below the same so that no trees, stumps, roots, or rocks, shall remain in any part of the river within two hundred feet of the face of this path, with less than six feet of water on them at the lowest stage of the water.

And no tree or stump obtained from the grubbing shall be cast into the river.

The resident Engineer shall direct the manner in which the work is to be performed and decide all questions arising under this specification & the monthly estimates shall be graded by him so as to commensurate with the relative value of the parts of the work done & to be done.²

The contract for construction of this portion of the towpath was awarded to Medler Roderma and Company.³ Within a short time, this firm abandoned the work,⁴ and an assessment was made on January 15, 1834.

² *Ibid.*

³ *Ibid.*, Estimate Book, Fourth Residency, p. 192

⁴ *Ibid.*

For eighteen months the Canal Company's officials suspended work at "Big Slackwater" while concentrating on other sections and studying proposals for steam navigation on the impounded water. After rejecting steam navigation in favor of continuous mule power, the company returned to the subject of the towpath.

On July 29, 1836, the President and Directors accepted Joseph Hollman's proposal for building the towpath along the slackwater.⁵ On August 16 of that year, John D. Grove was associated with Hollman on the towpath contract. The Company's Board of Directors also set a date, January 1, 1838, as the completion date for the work.⁶

As the work progressed, the contractor became convinced that a stone wall should be erected along the base of the towpath to protect it from the action of the water. After some discussion, the Board of Directors referred the matter to the Resident Engineer.⁷ Apparently, the Engineer approved of Hollman's recommendation. The final estimate for the "stone protection" was passed by the Company's Board of Directors on January 9, 1840.⁸

The work on the towpath was not completed by the designated date of January 1, 1838; however, the Canal Company did not penalize the contractor - perhaps because that unfortunate person, who had other contracts along the Canal, was having enough trouble without being held to strict account in this instance.⁹

The work on the slackwater towpath was completed in mid-1839, and the final estimate for the contract was passed by the Company's officers on January 9, 1840, with a payment of interest for six months as compensation for delay in making final payment.¹⁰

⁵ *Ibid.*, *Proceedings of President and Directors*, July 29, 1836.

⁶ *Ibid.*, *Proceedings of President and Directors*, August 16, 1836.

⁷ [footnote text missing in original]

⁸ *Ibid.*, *Proceedings of President and Directors*, January 9, 1840

⁹ Hollman was the contractor for Dam Number 4 and other works. His experiences were costly to him, and he eventually became an employee of the Company, almost as an act of charity in view of his losses incurred in fulfilling contracts.

¹⁰ See f.n. 8

III: Hutton's 1872 Report on the Towpath

The most promising period of the C & O Canal's history occurred during the early 1870's, when capable management and generally prosperous economic conditions conspired to make possible a brief boom when the Company enjoyed the novel experience of making a profit. In the warmth of this pleasant situation, the Board of Directors directed the Chief Engineer, William R. Hutton, to make a thorough inspection of the canal and to draw up recommendations for immediate repairs.¹¹

Hutton made his inspection and submitted recommendations for repairs. Some of his proposals were acted upon during the short era of prosperity, but others were deferred; and the conditions that he described in his report tended to become chronic.

Hutton's comments on the towpath included the following statements:

The tow-path has recently been made up over a large part of its length, and most of it looks well. The remainder can be put in order by repair hands. Where made up with slate it has a moderate durability, but where earth is used, as it has on long portions, it cuts out immediately, and in wet weather becomes almost impassable. Some parts have been covered with large stones and earth, and some short pieces with properly prepared broken stone. This last method, recommended in the report of 1870, is, in my judgment, the proper one, and will prove, in the end most economical.¹²

This comment illustrates the variety of materials used in the formation of the towpath - a variety that was the product of the exigencies of the construction situation.

Hutton continued in discussing the towpath:

The estimate of July 1870, included some \$14,500 to raise and repair 20 miles of towing-path, considered too low, which has been in small part expended. Expended, I mean, for extra labor to raise it, for much larger amounts have been paid since that time for maintenance of tow-path. It would be better if all the work were done, but I do not think it necessary to make up more than 5 or 6 miles on the lower divisions. Portions of it have been raised on the front edge, while the rest of the bank remains low. No towing path should be considered satisfactory which is not, for a width of ten feet, at least, one foot above Canal surface, two feet being the regular height. The excavation of the bottom however, will in some places permit the water surface to be lowered, and thus leave the towing path a sufficient height above it.¹³

¹¹ *Ibid.*, *Proceeding of President and Directors*, June 17, 1872.

¹² *Report of W. R. Hutton, Chief Engineer, as to condition of Chesapeake and Ohio Canal, with estimate of cost of Extraordinary Repairs Required during the Current Year*, Luther F. Colton, Printers, Annapolis, 1872, pp. 5-6

¹³ *Ibid.*, p. 6

In his recommendation concerning the towpath, Hutton wrote:

I strongly urge that the towing path be made up for a width of four or five feet with sound broken stone, laid on a thickness of about six inches. The adoption of this plan will render advisable the purchase of a stone breaking machine, which can be moved from point to point on Canal, as may be found convenient. One or both of the steam engines owned by the Company can probably be used for this purpose.¹⁴

Because the work on the path was accomplished by Company employees, the records do not indicate with any degree of exactness the extent to which this recommendation was followed. However, physical evidence at various points seem to indicate that Hutton's suggestion was acted upon along much of the length of the Canal.¹⁵

¹⁴ *Ibid.*, p. 24

¹⁵ Efforts to find the 1870 report, referred to in Hutton's report, have been unsuccessful.

IV: Conclusion

This report indicates that the Canal's towpath was built of the materials that were immediately available and that the strength and durability were affected, if not determined, by the type and quality of materials used. Hutton's recommendations reflect an effort to improve upon the inherent condition through the application of a standard broken stone surface.

The information included in Parts I and II of the report constitutes all of the construction data found relating to the towpath at the time of the study. It does not represent an exhaustive treatment that would involve a more extensive search for and examination of all original canal sources.

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1. The towpath in Georgetown, early 20th Century, looking upstream.

In this picture the towpath is looking upstream from Lock No. 2. Throughout most of the canal's operating days the towpath was located on the land (non-river) side of the canal between Rock Creek and upper Georgetown. A mule crossover bridge carried the towpath to the river side above the Georgetown section where wharfs lined the river side.



2. The canal and towpath just below the Wisconsin Avenue Bridge, early 20th Century.



3. Towpath in Georgetown c. 2000. Photograph by Jeff O'Brien.

The photographer is looking downstream from a pedestrian bridge over the canal. Two more pedestrian bridges may be seen in front of the original stone arch bridge carrying Wisconsin Avenue over the canal in the distance. The *Georgetown* mule pulled excursion boat with its mules is seen in this photograph with the wall of former warehouse buildings on the right and the stone wall of the former Capital Traction building on the left, now Georgetown Park Mall and condominiums.



4. Mule crossover bridge that carries the towpath over the canal above Georgetown.

The location of the crossover bridge what transferred the towpath from the river to the land side for its passage through Georgetown changed several times during the canal operating days and is currently located below Key Bridge. Note the Alexandria Canal's Potomac Aqueduct.



5. Towpath above Georgetown, early 20th Century.
Just beyond the stone wall on the left is Canal Road.



6. Canal with towpath on the far side passing under Chain Bridge.
This c. 1865 Civil War photograph is in the Library of Congress, Prints & Photographs collection. Chain Bridge crosses the Potomac to Virginia and is located at mile 4.17 on the canal. Note the soldiers looking down on the canal.



7. Towpath at Lock No. 8, Cabin John, mile 8.33, early 20th century.



8. Towpath below Lock No. 20 at Great Falls after the 1889 flood.



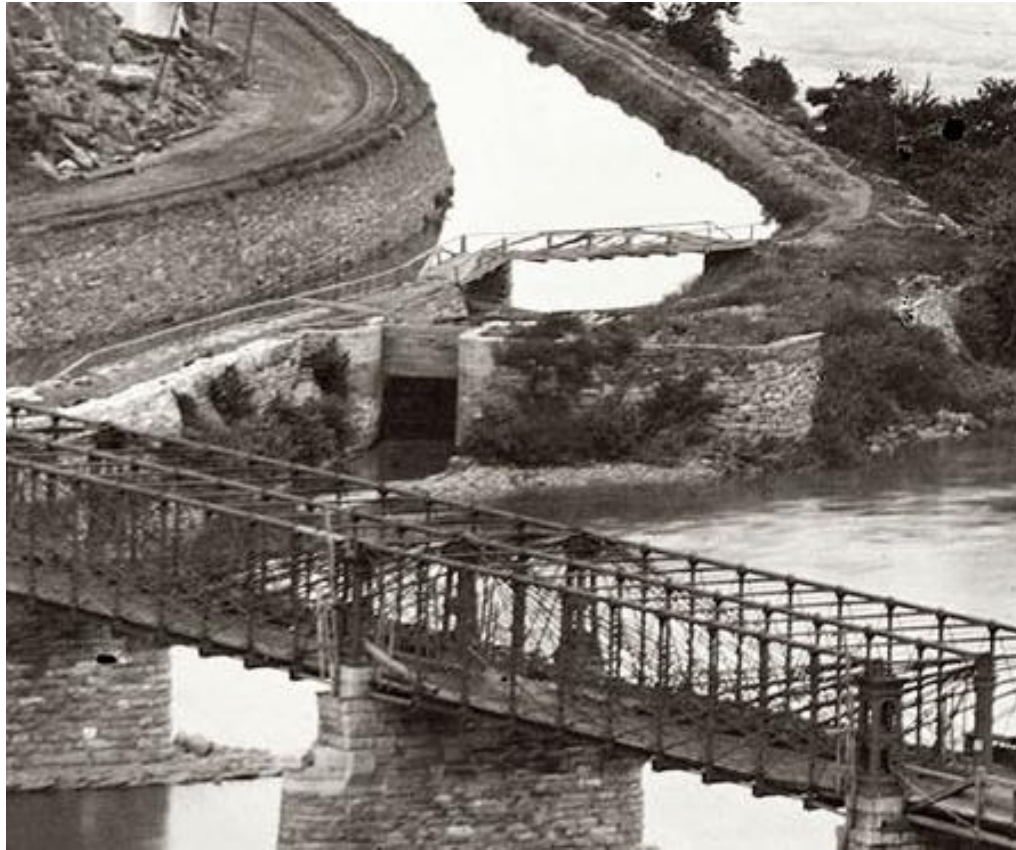
9. Towpath in the early 20th Century along a rural section in Montgomery County.
Note that here the towpath is literally a path.



10. Towpath in the early 20th Century looking upstream toward Point of Rocks.



11. Towpath with upstream portal of the Point of Rocks railroad tunnel.

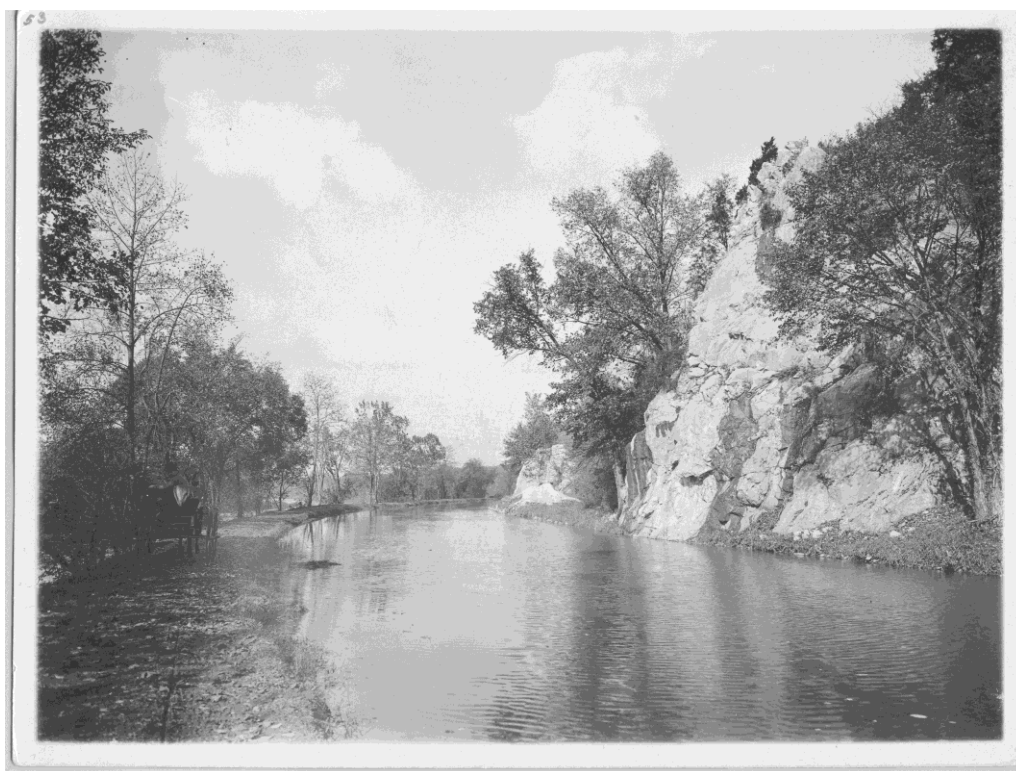


12. Towpath and towpath bridge over the river lock at Harpers ferry.

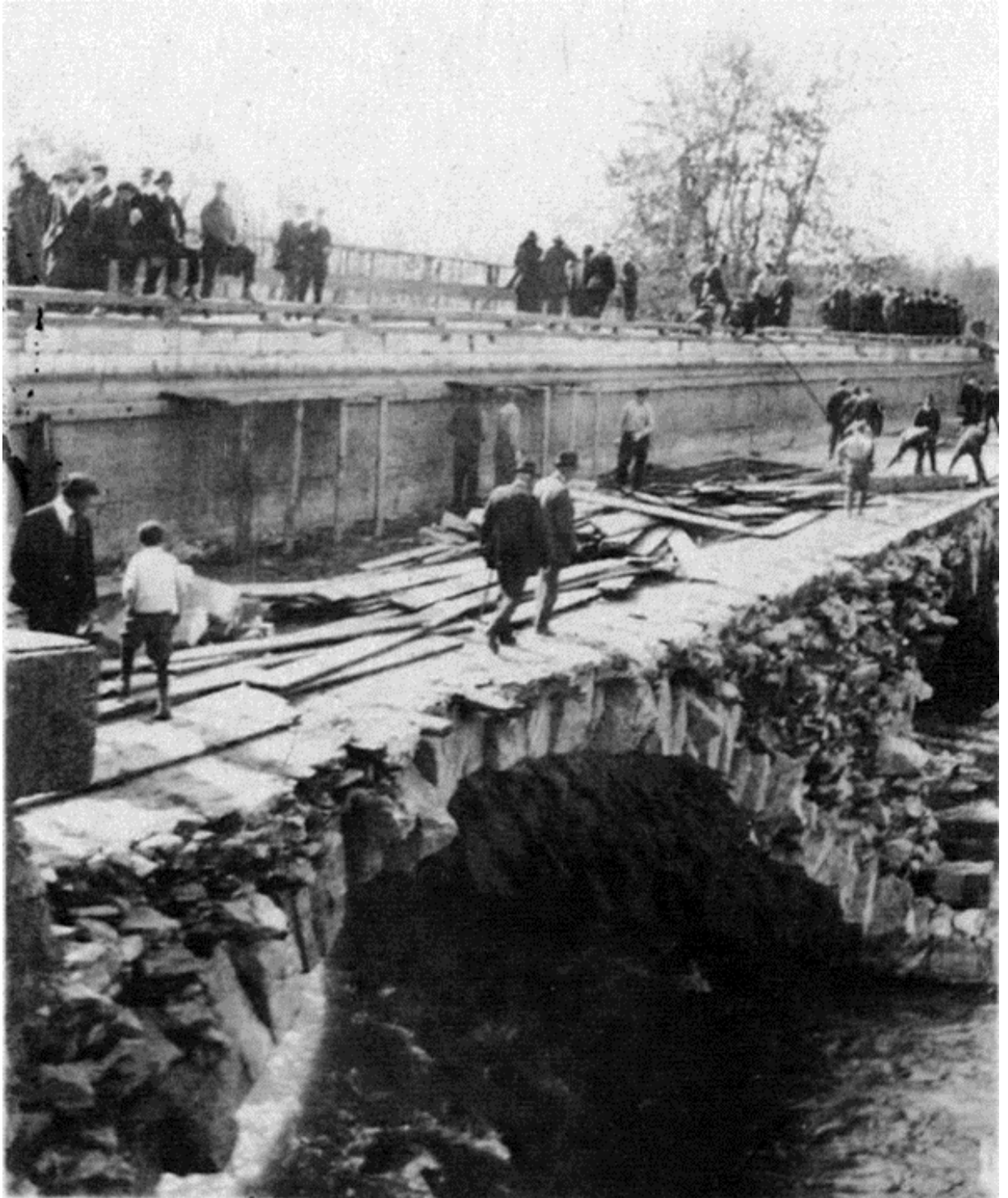
The first railroad bridge across the Potomac is visible in the foreground and the railroad with the Frederick–Harpers Ferry toll road beside it is on the land side of the canal. Note that the first alignment for the B&O Railroad required a virtually 90 degree turn onto the bridge. Each of the river locks and inlet locks that breach the towpath berm require a towpath or “mule bridge”.



13. The towpath at Lock No. 38 at Bridgeport below Ferry Hill.
The lockhouse is on the left between the river and the canal,
and Knode's store is on the land side of the lock.



14. Carriage on the towpath above Bridgeport.
Normally wheeled vehicles were not permitted on the towpath. Note however that the
canal is overly full with water running over the towpath. The photographer and/or canal
maintenance staff may be using the carriage for with permission or for surveying condi-
tions along the canal.



15. Conococheague Aqueduct trunk and towpath parapet May 2, 1920.

This photo from the Sephen Marder collection of historic canal and railroad images was made following the April 20, 1920 collapse of the upstream parapet of the Conococheague Aqueduct. The wall was quickly replaced with a wooden parapet.



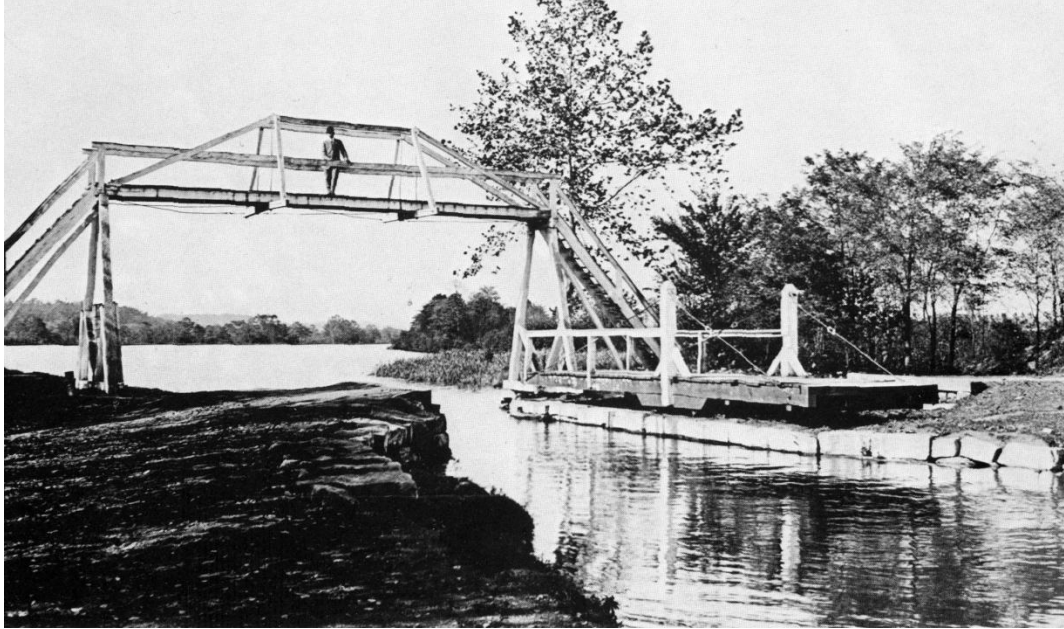
16. Entrance to Inlet Lock No. 5 with crossover bridge on top.

Inlet Lock No. 5 is at the lower end of Little Slackwater, just above Dam 5. Inlets are always protected by high guardwalls that the inlet lock breeches, necessitating that the lock have high upstream abutments and gates to allow the boats and water passage through the guard wall. The towpath is alongside the river through the slackwater areas and the crossover bridge transfers the towpath from the river side of the canal to the river bank.



17. The canal and towpath through the Four Locks Community.

The towpath was inevitably a main street where a community grew up on both sides of the canal. Four Locks was such a community. This photograph from the late 19th Century show a small section of the dry dock in the lower right corner with the Lock No. 47 bypass flume in the center and the lock to the left of the flume. Lock 48 is seen in the background along with a store over its flume.



18. Pedestrian Bridge and swing bridge over the stop gate at the lower end of Big Pool. At some locations a pedestrian bridge and/or a swing bridge allowed passage across the canal to and from the towpath. The swing bridge that is on the stop gate wall on the far side of the canal, could be swung across the stop gate to allow vehicles or horses across. The stop gate could be closed to retain water in the canal and Big Pool section above the gate when the canal below the gate was closed.



19. Big Pool towpath berm washout repairs, ca. 1890–91. Rather than building two berms to form the narrow canal prism, several sections of the canal use the natural topography in a way that results in a large pool being formed between the towpath berm and higher land a distance away. In the 1889 flood, part of the towpath berm washed out at Big Pool, one of these sections, draining the pool and requiring a massive rebuilding of the berm.



20. Towpath beside Dam No. 6 inlet channel.

The abutment and small part of the bridge that carries the towpath over the channel bringing water from behind Dam No. 6 is visible in the lower right corner. Lock No. 54 is located immediately above the inlet and a launch can be seen in the lock. At the center of the photo is the lockhouse for Lock No. 55 located beside but above the inlet lock and Dam No. 6.

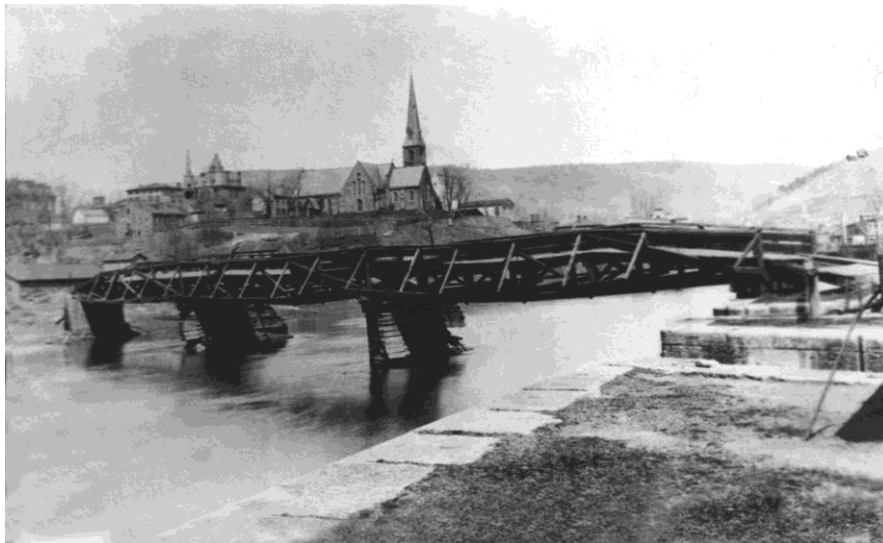


21. Towpath in the deep cut at the downstream end of the Paw Paw tunnel.
A boardwalk built beside the shale wall carried the towpath through the deep cut.



22. The towpath passing under the Wiley Ford Bridge.

Initially the C&O Canal Company avoided building bridges across the canal and towpath because of the expense of construction and maintenance, but they were generally required where there were roads to ferries and fords. Note the width of the towpath here and its obvious use by wheeled vehicles. The photograph was taken in winter when the canal was largely drained.



23. Mule tracking bridge over Wills Creek in Cumberland.

When the canal opened from Cumberland in 1850, the wharfs were across Wills Creek and a mule tracking bridge carried the animals across the mouth of the creek just above the river lock and inlet beside it (seen on the right in front of the bridge). The towpath then diverged to wharfs up the creek and along the Potomac River. Later towpaths existed along the basins in Cumberland that changed frequently as the location of boatyards and loading wharfs changed.

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